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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,837	02/09/2004	JonYeon Oh	2003P15546US01	8800

7590 10/12/2006  
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EXAMINER

BOES, TERENCE

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/774,837	OH ET AL.	
	Examiner	Art Unit	
	Terence Boes	3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 August 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-10, 12-17, 19 and 20 application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10, 12-17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-5, 7-10, 12-17, 19, and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the recitation "...without biasing the spherical portion in a direction out of the recess..." appearing in the last lines of independent claims 1, 8, and 13, was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s) had possession of the claimed invention at the time the application was filed. Where in the original disclosure is this limitation enabled for?

### ***Response to Amendment***

2. The amendment filed 08/07/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "...without biasing the spherical portion in a direction out of the recess..." appearing in the last lines of independent claims 1, 8, and 13.

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, 8, 13, 14, 16, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bohn et al. US 5,886,437.

Bohn et al. disclose:

- a body (see figure 1, Roman Numeral II) including a generally elliptically-shaped recess (see figure 2, recess is shown containing 70) therein,
- the recess being constructed and arranged to be disposed generally adjacent to an end of the shaft (16, also see figure 2),
- an engagement member (70) having a generally spherical portion constructed and arranged to be received in a press-fit arrangement with the recess,
- the engagement member having a surface constructed and arranged to contact the end of the shaft (see figure 2),
- whereby, when the surface of the engagement member is contacted by the end of the shaft, the spherical portion of the engagement member is press-fitted into the recess to control endplay of the shaft.

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- wherein upstanding ribs (32, 34) extend from a bottom of the recess (a bottom of recess is considered the right side of figure 2 as the device can be oriented in this way), the ribs being constructed and arranged such that as the spherical portion of the engagement member is press-fitted into the recess, the ribs deform enabling the spherical portion to move further into the recess with the ribs defining a stop without biasing the spherical portion in a direction out of the recess (ribs are capable of deforming as can be seen by the broken line of figure 2, furthermore ribs are capable of defining a stop without biasing the spherical portion, for example, when the ribs are touching, but not biasing the end walls as can be seen in figure 2).
  - Furthermore, the examiner considers this portion of the claim to be a functional limitation (See Paragraph 4 below and MPEP 2114)
- with a housing (12) of the motor,
- the body being integral with the housing (see figure 1).
- in combination with a gearhousing (22) and a shaft (16) of a motor,
- wherein the body is integral with the gearhousing.

Regarding claim 8

- a gearhousing (22) having a gear (see figure 1, gear is shown with axis 24 engaging worm 14)
- a shaft (16) and a worm (14) constructed and arranged to engage the gear

Regarding claim 13

- means for receiving (see figure 1, Roman Numeral II)
- means for engaging (70)

4. Regarding the recitation "...the ribs being constructed and arranged such that as the spherical portion of the engagement member is press-fitted into the recess, the ribs deform enabling the spherical portion to move further into the recess with the ribs defining a stop without biasing the spherical portion in a direction out of the recess..." appearing in claims 1, 8, and 13, while features of an apparatus may be recited either structurally or functionally, claims directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. Therefore, claims 1, 8, and 13 are rejected since all claim limitations have been met as disclosed above (see MPEP 2114).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4, 7, 8, 12, 13-14, 16, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sangret USP 6,269,709 in view of Pohl DE 195 13 970 A 1.

Sangret discloses:

Re Clms. 1,20

- A body (10)

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- A generally elliptically-shaped (as best understood) recess (Fig. 2, recess is shown receiving engagement member (32))
- An end of a shaft (26)
- An engagement member (32) having a spherical portion (32 is a sphere) and a surface for contacting the end of a shaft (spherical engagement member (32) is shown contacting shaft (26), and therefore contains a surface for contacting)

Re Clms. 2,14

- Housing of a motor (housing surrounding electric motor (11)) integral with body

Re Clms. 4,16

- A gearhousing (60)
- A shaft of a motor (24)
- Body (10) integral with gearhousing (60)

Re Clm. 8

- Gearhousing (60) having a gear (40)
- Shaft (24) having a worm (20)
- A body (10)
- Generally elliptically-shaped (as best understood) recess (Fig. 2, recess is shown receiving engagement member (32)) disposed adjacent to an end of the shaft

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- Engagement member (32) having a spherical portion (32 is spherical) received in a press-fit arrangement with the recess (the shaft is shown pressing the engagement member to fit in the recess and is therefore considered by the examiner to be a press-fit arrangement)
- A surface (spherical engagement member (32) is shown contacting shaft (26), and therefore contains a surface for contacting) of the engagement member contacting the end of the shaft

Re Clm. 13

- A body (10)
- Means for receiving (Fig. 2, recess is shown receiving engagement member (32)) disposed generally adjacent to an end of the shaft
- Means for engaging (32) having a portion arranged to be received in a press-fit arrangement with the means for receiving (the shaft is shown pressing the engagement member to fit in the recess and is therefore considered by the examiner to be a press-fit arrangement)
- Whereby, when the surface of the means for engaging is contacted by the end of the shaft, the portion of the means for engaging is press-fitted into the means for receiving to control endplay of the shaft (see Fig. 2, (32) is shown contacting the end of the shaft as well as fitting into the recess)

Sangret discloses all of the claimed subject matter as described above.



Sangret does not disclose upstanding ribs extending from a bottom of a recess so as to define a deformable stop, wherein the ribs form an X-shape.

Pohl teaches upstanding ribs (28) extending from a bottom of a recess (20) so as to define a deformable stop, wherein the ribs form an X-shape for the purpose of providing elastic deformation ((28) is a spring element, (C3/L20-25)).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Sangret and provide upstanding ribs extending from a bottom of a recess so as to define a deformable stop, wherein the ribs form an X-shape, as taught by Pohl, for the purpose of providing elastic deformation.

Regarding the recitation "...the ribs being constructed and arranged such that as the spherical portion of the engagement member is press-fitted into the recess, the ribs deform enabling the spherical portion to move further into the recess with the ribs defining a stop without biasing the spherical portion in a direction out of the recess..." appearing in claims 1, 8, and 13; while features of an apparatus may be recited either structurally or functionally, claims directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. Therefore, claims 1, 8, and 13 are rejected since all claim limitations have been met as disclosed above (see MPEP 2114).

6. Claims 3,5,9,10,15,17, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohn et al. US 5,886,437 in view of Schönsteiner USP 5,794,480.

Bohn et al. disclose all of the claimed subject matter as described above.

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Bohn et al. do not disclose an engagement member defined by a concave surface that mates with a matching convex surface defined at the end of a shaft to define point to point contact.

Schönsteiner teaches an engagement member (4) defined by a concave surface (5) that mates with a matching convex surface defined at the end of a shaft (6) to define point to point contact for the purpose of preventing lateral deflection of a worm gear shaft (C2/L50-57).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Bohn et al. and provide an engagement member defined by a concave surface that mates with a matching convex surface defined at the end of a shaft, as taught by Schönsteiner, for the purpose of preventing lateral deflection of a worm gear shaft.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-5, 8-10 13-17 and 20 have been considered but are moot in view of the new ground(s) of rejection.

8: Applicant's arguments filed 08/07/2006 have been fully considered but they are not persuasive.

Applicant argues:

a. One of ordinary skill in the art would not look to Pohl to modify Sangret by providing ribs that define a deformable stop since the recess of Sangret already provides a stop.

- i. In response, the examiner respectfully disagrees. While Sangret does indeed provide a stop, Sangret clearly does not provide a **deformable** (emphasis added) stop. Therefore, the examiner asserts that one of ordinary skill would look to Pohl to provide a means of deforming, not to provide a means of simply stopping as the applicant appears to have implied.
- b. ...if springs 28 of Pohl were employed in the recess of Sangret, the springs 28 would actually bias the ball 32 of Sangret out of the recess.
  - ii. In response, the examiner respectfully disagrees. Both Sangret and Pohl disclose motors, worms, and shafts which would provide a reactionary equal and opposite force, preventing the ball 32 of Sangret from moving out of the recess.
- c. [Sangret in view of Pohl do not disclose] that the ribs deform enabling the spherical portion to move further into the recess with the ribs defining a stop without biasing the spherical portion in a direction out of the recess.
  - iii. In response, the examiner respectfully disagrees. First, this claim limitation is functional and does not distinguish the invention over the prior art (see MPEP 2114). Furthermore, it is well known the deformation can have both plastic and elastic components and that all materials which deform plastically must first deform, at least to some extent, elastically. Therefore because the ribs of the applicant's instant invention are claimed to have deformed, then there must be as a consequence at least a small

elastic component to this deformation which would bias the spherical portion in a direction out of the recess, so long as there is a load on the plastic ribs. Furthermore, it is also noted that the original disclosure does not appear to enable for a device "defining a stop without biasing the spherical portion in a direction out of the recess".

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

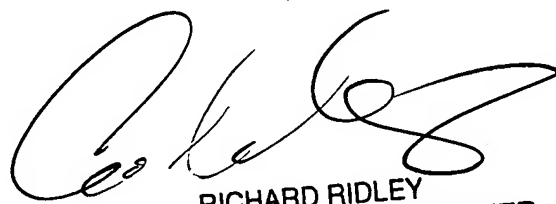
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terence Boes whose telephone number is (571) 272-4898. The examiner can normally be reached on Monday - Friday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TB  
10/5/06



RICHARD RIDLEY  
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